



PFC Device Corporation

PFR40V45PT PFR40V45PT-L

40A 45V MOS Schottky Rectifier

Major ratings and characteristics

Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	20×2	A
V_{RRM}	45	V
$V_F@ 20A, T_J=125^\circ C$	0.44	V, typ.
T_J Operating Junction Temperature	-65 to +150	$^\circ C$

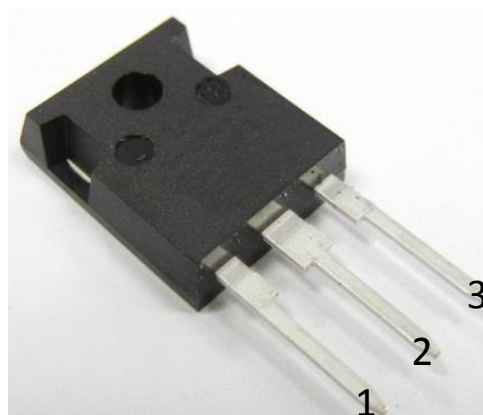
Features

- Ultra Low Forward Voltage Drop
- Reliable High Temperature Operation
- Softest, fast switching capability
- $150^\circ C$ Operating Junction Temperature
- Lead Free Finish, RoHS Compliant

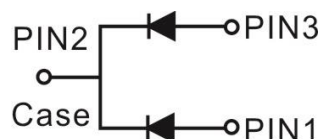
Typical Applications

Device optimized for ultra-low forward voltage drop to maximize efficiency in Power Supply applications

PFR40V45PT



TO-247AB



1. Characteristics

Maximum Ratings Characteristics

($T_A = 25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Values	Units
DC Blocking Voltage	V_{RM}	45	Volts
Working Peak Reverse Voltage	V_{RWM}		
Peak Repetitive Reverse Voltage	V_{RRM}		
Average Rectified Forward Current Per device	I_o	40	Amps
(Rated VR-20Khz Square Wave) - 50% duty cycle			
Peak Forward Surge Current - 1/2 60hz	I_{FSM}	350	Amps
Peak Repetitive Reverse Surge Current (2uS-1Khz)	I_{RRM}	2	Amps
Typical Thermal Resistance (per leg)	$R\theta_{JC}$	1.5	$^{\circ}\text{C} / \text{W}$
Maximum Rate of Voltage Change (at Rated VR)	dv/dt	10000	V/uS
Operating Junction Temperature	T_J	- 65 to +150	$^{\circ}\text{C}$
Storage Junction Temperature	T_{STG}	- 65 to +150	

Electrical Characteristics - (per leg)

($T_A = 25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Test Conditions		Symbol	Typ.	Max.	Units
Breakdown Voltage	$I_R = 0.5\text{mA}$	$T_J = 25^{\circ}\text{C}$	V_B^*	45 (min.)		V
Instantaneous Forward Voltage	$I_F = 20\text{A}$	$T_J = 25^{\circ}\text{C}$	V_F^*	----	0.50	Volts
		$T_J = 125^{\circ}\text{C}$		0.44	0.46	
Instantaneous Reverse Current	At V_{RM}	$T_J = 25^{\circ}\text{C}$	I_R^*	----	500	μA
		$T_J = 125^{\circ}\text{C}$		----	100	mA

* Pulse width < 300 uS, Duty cycle < 2%



2. Characteristics Curves

Ratings and Characteristics Curves

($T_A = 25^{\circ}\text{C}$ unless otherwise specified)

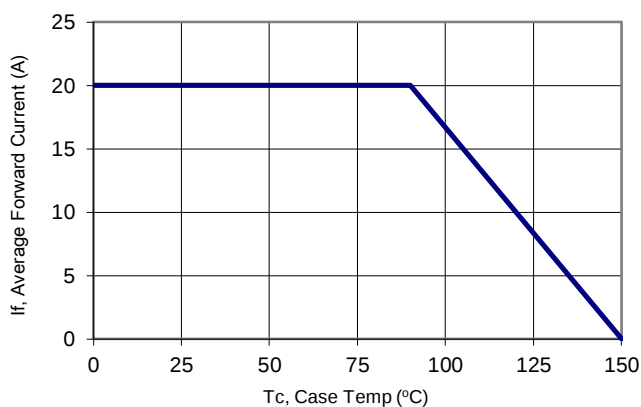


Figure 1: Current Derating, Case

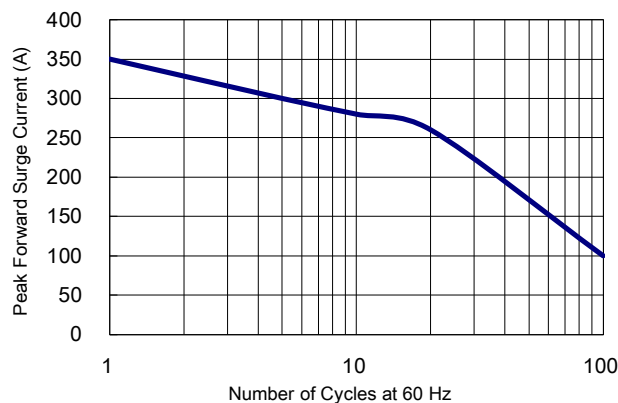


Figure 2: Maximum Repetitive Surge Current

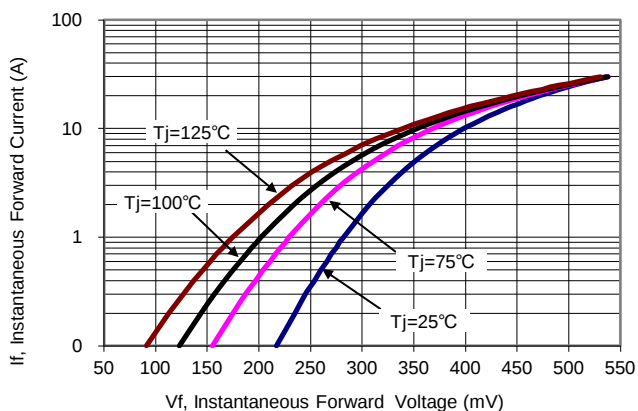


Figure 3: Typical Forward Voltage

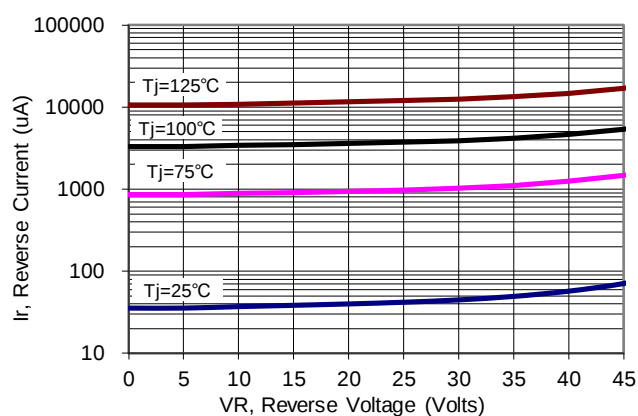


Figure 4: Typical Reverse Current

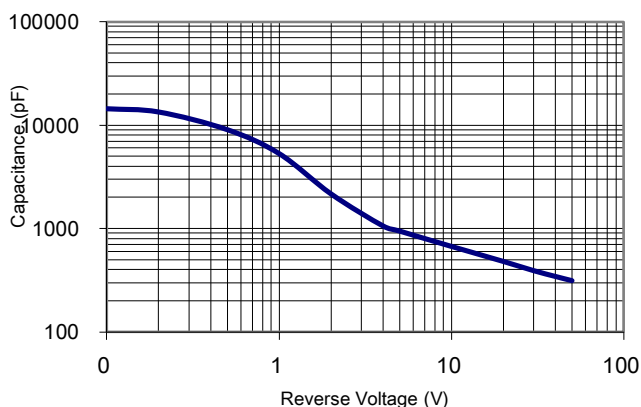
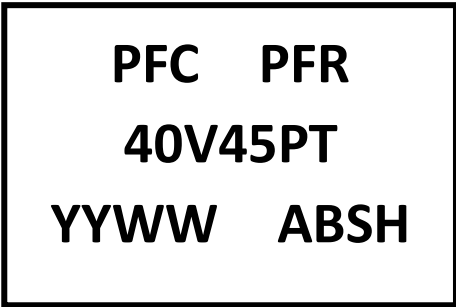


Figure 5: Typical Junction Capacitance



3. Marking information

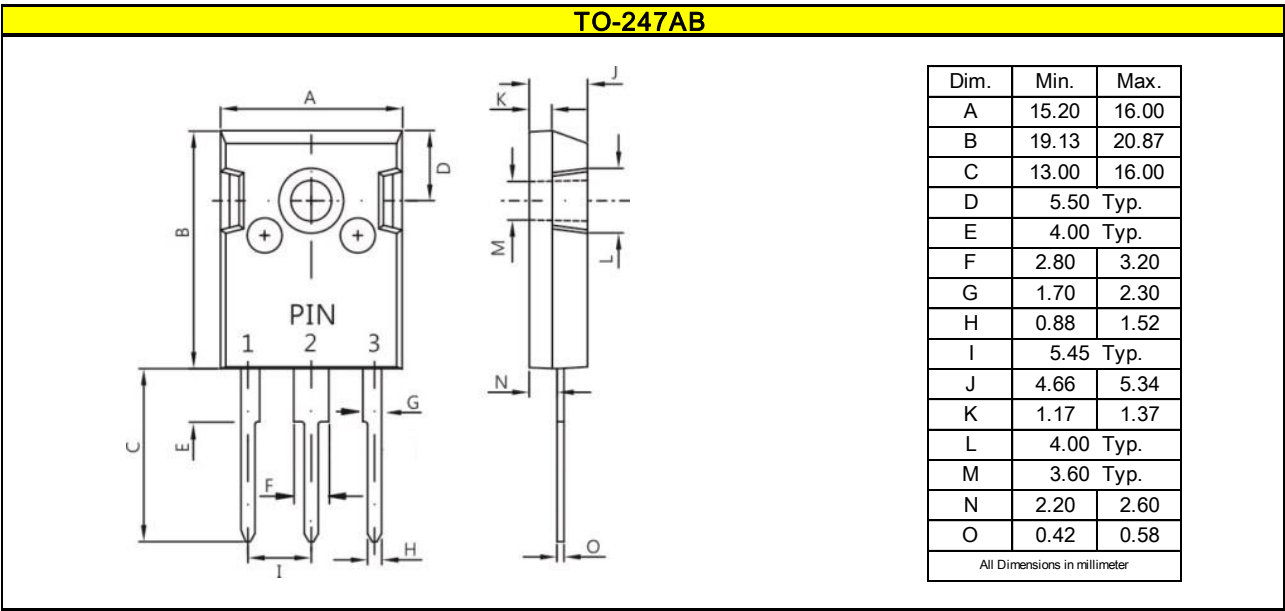
Top Marking Rule

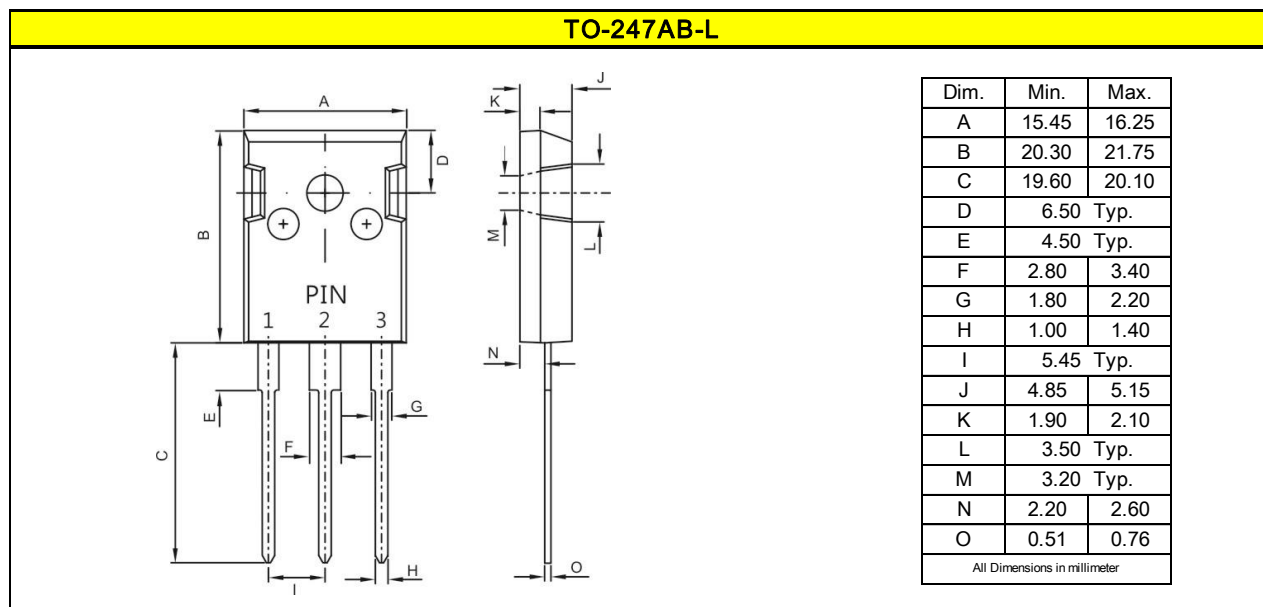


PFR40V45PT = Product Type Marking Code
YYWW = Date Code
YY = Last two digits of year
WW = Week code
AB = Assembly code
S = Series Number
H = Halogen Free (N/A = common molding compound)

4. Package information

Package Outline Dimensions millimeters





5. Ordering information

Part Number	Package	Delivery mode
PFR40V45PT	TO-247AB	30 pieces / tube
PFR40V45PT-L	TO-247AB-L(long lead)	30 pieces / tube

Note: For Halogen Free molding compound, add "H" suffix to part number above.

Mechanical

- Molder Plastic: UL Flammability Classification Rating 94V-0
- Device Weight : 0.16 ounces (4.53grams) - TO-247AB
0.197 Ounces (5.6grams) – TO-247AB-L (long lead)
Mounting Torque : 10 in-lbs maximum.



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